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|---------------|-------------|-----------------------|---------------------|
| SERIAL NUMBER | FILING DATE | FIRST NAMED APPLICANT | ATTORNEY DOCKET NO. |
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| EXAMINER     |              |
| BARRON JR, G |              |
| ART UNIT     | PAPER NUMBER |
| 222          |              |

DATE MAILED: 11/30/88

This is a communication from the examiner in charge of your application.

COMMISSIONER OF PATENTS AND TRADEMARKS

This application has been examined  Responsive to communication filed on \_\_\_\_\_  This action is made final.

A ~~shortened~~ statutory period for response to this action is set to expire 6 month(s), 0 day(s) from the date of this letter.  
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

1.  Notice of References Cited by Examiner, PTO-892. 2.  Notice re Patent Drawing, PTO-948.  
3.  Notice of Art Cited by Applicant, PTO-1449 4.  Notice of informal Patent Application, Form PTO-152  
5.  Information on How to Effect Drawing Changes, PTO-1474 6.  \_\_\_\_\_

Part II SUMMARY OF ACTION

1.  Claims 1-39 are pending in the application.

Of the above, claims \_\_\_\_\_ are withdrawn from consideration.

2.  Claims \_\_\_\_\_ have been cancelled.

3.  Claims \_\_\_\_\_ are allowed.

4.  Claims 1-4, 20-24, 17, 37, 10, 30, 15 and 35 are rejected.

5.  Claims 5-9, 11-14, 16, 18-19, 25-29, 31-34, 36 are objected to. au 38-39

6.  Claims \_\_\_\_\_ are subject to restriction or election requirement.

7.  This application has been filed with informal drawings which are acceptable for examination purposes until such time as allowable subject matter is indicated.

8.  Allowable subject matter having been indicated, formal drawings are required in response to this Office action.

9.  The corrected or substitute drawings have been received on \_\_\_\_\_. These drawings are  acceptable;  not acceptable (see explanation).

10.  The  proposed drawing correction and/or the  proposed additional or substitute sheet(s) of drawings, filed on \_\_\_\_\_ has (have) been  approved by the examiner.  disapproved by the examiner (see explanation).

11.  The proposed drawing correction, filed \_\_\_\_\_, has been  approved.  disapproved (see explanation). However, the Patent and Trademark Office no longer makes drawing changes. It is now applicant's responsibility to ensure that the drawings are corrected. Corrections **MUST** be effected in accordance with the instructions set forth on the attached letter "INFORMATION ON HOW TO EFFECT DRAWING CHANGES", PTO-1474.

12.  Acknowledgment is made of the claim for priority under 35 U.S.C. 119. The certified copy has  been received  not been received

been filed in parent application, serial no. \_\_\_\_\_; filed on \_\_\_\_\_.

13.  Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.

14.  Other

DECLASSIFICATION & REVIEW  
This document contains information under  
SECURITY ORDER, as defined in 35 USC 161-168.  
Unauthorized disclosure is subject to Civil  
and Criminal Sanctions.  
BY EXAMINER'S ACTION

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1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless-

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-4 and 20-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Gendreau or Rawicz.

The instant claims read on either Gendreau or Rawicz. Both references generate target model data, Gendreau with simulating circuit #17 and Rawicz with position computing apparatus #22. Both references collect actual flight path data, Gendreau with a radar, and Rawicz with sensor #10. Both generate an error measurement, Gendreau with tracking unit #5 and Rawicz with mixer #12. Both adjust the model data to reduce the error with loop feedback paths. Both calculate range, given at outputs of the model data generators.

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3. Claims 17 and 37 rejected under 35 U.S.C. 103 as being unpatentable over Gendreau or Rawicz in view of Fukuhara et al.

The claimed invention differs from Gendreau and Rawicz in reciting generating initial model data. Fukuhara et al. teach a position measuring system which calculates a vehicle's position with initially estimated values imputted into a convergent computing section. It would have been obvious to one of ordinary skill in the

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art to provide initial model data with the systems of Gendreau or Rawicz to determine range in the shortest possible time as taught in Fukuhara et al.

4. Claims 10 and 30 are rejected under 35 U.S.C. 103 as being unpatentable over Gendreau or Rawicz in view of Newell et al.

The claims invention differs from Gendreau or Rawicz in the calculation of a perturbation model to reduce the error measurement in the systems. Newell et al. teach a target course predictor which includes a perturbation model to smooth or reduce error measurements caused by tracking irregularities. It would have been obvious to one of ordinary skill in the art to provide the systems of Gendreau or Rawicz with means for smoothing or reducing error measurements with a perturbation model as taught in Newell et al.

5. Claims 15 and 35 are rejected under 35 U.S.C. 103 as being unpatentable over Gendreau or Rawicz in view of Golinsky.

These claims differ from Gendreau or Rawicz in the adjustment of flight path of the monitoring plane for optimizing the ranging performance of the system. Golinsky teaches a passive ranging system where the monitoring plane's speed is varied (or adjusted) to provide better ranging performance than a constant velocity path. It would have been obvious to one of ordinary skill in the art to have adjusted the flight paths of monitoring plane as taught in Golinsky to improve ranging performance of tracking systems as in Gendreau or

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Rawicz.

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Libmon et al. relates to target course tracking using a least-means squares error measurement algorithm. Lubar relates to passive geometrical ranging systems. Virnot relates to vehicle guidance using a Kalman filter-type circuit generating state vectors of the vehicle.

7. Claims 5-9, 11-14, 16, 18-19, 25-29, 31-34, 36 and 38-39 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. This communication is from the Examiner assigned to case, Gilberto Barron, Jr., whose telephone number is 703-557-4926.

687.

Gilberto Barron, Jr.  
11-23-88

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THOMAS H. TARCZA  
SUPERVISORY PRIMARY EXAMINER  
GROUP ART UNIT 222